(iii) in the pre-existing intracellular pathway for the synthesis or degradation of sucrose or reducing sugar.

96. (New) A transgenic seed comprising a chimeric gene which comprises;

(a) a promoter that directs gene expression in a plant operably linked to

(b) a coding sequence which encodes an enzyme selected from the group consisting of phosphofructokinase, pyruvate kinase, acid invertase, starch synthase, sucrose synthase, 6-phosphofructokinase (pyrophosphate) and sucrose phosphate synthetase;

wherein expression of said chimeric gene in a transgenic plant grown from said transgenic seed causes a modification of the amount of a metabolic intermediate:

(i) in the pre-existing intracellular pathway of glycolysis,

(ii) in the pre-existing intracellular pathway for the synthesis or degradation of starch, or

(iii) in the pre-existing intracellular pathway for the synthesis or degradation of sucrose or reducing sugar.--

REMARKS

Applicant has amended the specification to include the subject matter of claim 6 as originally filed in the great-grandparent application Serial No. 07/628,216, filed December 17, 1990. Accordingly, the amendment does not introduce new matter. A mark-up of the amended paragraph, with insertions indicated by underlining, is included herewith as Exhibit A.

Claims 2-4, 7, 8, 13-16, 20, 21, 34 and 34 in the present application were the subject of Interference No. 104,046 in which Adverse Judgment was entered for these claims by the Board of Patent Appeals and Interferences in a Judgment mailed February 27, 2002. Accordingly, Applicant has canceled claims 2-4, 7, 8, 13-16, 20, 21, 34 and 43. Claims 31 and 39 were pending in the application when the interference was declared but were not designated as corresponding to the interference count. Claims 31 and 39 have been canceled without prejudice since they depended on a claim involved in the interference and have been

rewritten in independent form as claims 60 and 66. Applicant has added new claims 60-96 by amendment herein. The new claims are all fully supported by the specification. Accordingly, this amendment does not introduce new matter. In particular, claims are supported in the specification, *inter alia,* as follows:

Claim(s)	Support in the Specification
60, 66, 68, 81, 93, 95	p. 1, l. 27 to p. 2, l. 27; p. 4, l. 2 to p. 5, l. 22
61, 67, 69, 76, 82, 89, 94	p. 4, ll. 3-10 (as amended); original claim 6
70-75 and 83-88	p. 5, ll. 11-22
62, 77	p. 4, ll. 18-21
63, 78	p. 7, ll. 10-11; p. 9, ll. 18-20
64, 65, 79, 80	p. 5, ll. 23-24
90, 92	p. 1, l. 27 to p. 2, l. 27; p. 4, l. 2 to p. 5, l. 22; original claim 6
91	p. 9, ll. 3-8
96	p. 1, l. 27 to p. 2, l. 27; p. 4, l. 2 to p. 5, l. 22; p. 7, ll. 10-11; p. 9, ll. 18-20

After entry of this amendment, claims 60-96 will be pending in the present application.

CONCLUSION

Applicant respectfully requests that the above-made amendments and remarks be entered into the file of the above-identified application. Allowance of the pending claims is earnestly requested.

Respectfully submitted,

Date June 7, 2002

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Enclosure

EXHIBIT A

MARKED UP VERSION OF PARAGRAPHS IN THE SPECIFICATION
U.S. PATENT APPLICATION NO. 08/284,199
AS FILED JUNE 7, 2002

At page 4, lines 3-10, please replace the paragraph beginning "In the invention, a chimeric gene," with the following paragraph:

In the invention, a chimeric gene is constructed which comprises (a) a suitable promoter operably linked to (b) a coding sequence the product of which causes modification of the amount of a metabolic intermediate in glycolysis or in a pathway for the synthesis or degradation of starch, sucrose or reducing sugar. The chimeric gene may be constructed in any convenient fashion. The coding sequence is provided such that it is expressible in plant cells. In a particular embodiment, the chimeric gene encodes for two or more enzymes.

EXHIBIT B

PENDING CLAIMS UPON ENTRY OF PRESENT AMENDMENT
U.S. PATENT APPLICATION NO. 08/284,199
AS FILED JUNE 7, 2002

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60. A process for the preparation of a transgenic plant, which process comprises:

(i) transforming a plant cell with a chimeric gene comprising (a) a promoter that directs gene expression in a plant operably linked to (b) a coding sequence which encodes for phosphofructokinase; and

(ii) regenerating a plant from the transformed plant cell;

wherein expression of said chimeric gene in said regenerated plant causes a modification of the amount of a metabolic intermediate:

(a) in the pre-existing intracellular pathway of glycolysis.

(b) in the pre-existing intracellular pathway for the synthesis or degradation of starch, or

(c) in the pre-existing intracellular pathway for the synthesis or degradation of sucrose or reducing sugar.

61. The process of claim 60, wherein said chimeric gene also comprises a coding sequence encoding a second enzyme.

62. The process of claim 60, wherein said chimeric gene is expressed in a tuber of said regenerated plant.

63. The process of claim 60, wherein said chimeric gene is expressed in a seed of said regenerated plant.

64. The process of claim 60, wherein the coding sequence is from a plant gene.

65. The method of claim 60, wherein the coding sequence is from a non-plant gene.

66. A transgenic plant comprising a chimeric gene which comprises;

(a) a promoter that directs gene expression in a plant operably linked to

(b) a coding sequence which encodes phosphofructokinase,

wherein expression of said chimeric gene in said transgenic plant causes a modification of the amount of a metabolic intermediate:

(i) in the pre-existing intracellular pathway of glycolysis,

(ii) in the pre-existing intracellular pathway for the synthesis or degradation of starch, or

(iii) in the pre-existing intracellular pathway for the synthesis or degradation of sucrose or reducing sugar.

67. The transgenic plant of claim 66, wherein the chimeric gene also comprises a coding sequence that encodes a second enzyme.

68. A process for the preparation of a transgenic plant, which process comprises:

(i) transforming a plant cell with a chimeric gene comprising (a) a promoter that directs gene expression in a plant operably linked to (b) a coding sequence which encodes an enzyme selected from the group consisting of pyruvate kinase, acid invertase, starch synthase, sucrose synthase, 6-phosphofructokinase (pyrophosphate) and sucrose phosphate synthetase; and

(ii) regenerating a plant from the transformed plant cell;

wherein expression of said chimeric gene in said regenerated plant causes a modification of the amount of a metabolic intermediate:

(a) in the pre-existing intracellular pathway of glycolysis.

(b) in the pre-existing intracellular pathway for the synthesis or degradation of starch, or

(c) in the pre-existing intracellular pathway for the synthesis or degradation of sucrose or reducing sugar.

69. The process of claim 68, wherein the chimeric gene comprises coding sequences encoding two or more of the enzymes selected.

70. The process of claim 68, wherein the enzyme is pyruvate kinase.

71. The process of claim 68, wherein the enzyme is starch synthase.

72. The process of claim 68, wherein the enzyme is sucrose synthase.

73. The process of claim 68, wherein the enzyme is acid invertase.

74. The process of claim 68, wherein the enzyme is 6-phosphofructokinase (pyrophosphate).

75. The process of claim 68, wherein the enzyme is sucrose phosphate synthetase.

76. The process of claim 68, wherein said chimeric gene also comprises a coding sequence encoding a second enzyme.

77. The process of claim 68, wherein said chimeric gene is expressed in a tuber of said regenerated plant.

78. The process of claim 68, wherein said chimeric gene is expressed in a seed of said regenerated plant.

79. The process of claim 68, wherein the coding sequence is from a plant gene.

80. The process of claim 68, wherein the coding sequence is from a non-plant gene.

81. A transgenic plant comprising a chimeric gene which comprises:

(a) a promoter that directs gene expression in a plant operably linked to

(b) a coding sequence which encodes an enzyme selected from the group consisting of pyruvate kinase, acid invertase, starch synthase, 6-phosphofructokinase (pyrophosphate), sucrose synthase and sucrose phosphate synthetase,

wherein expression of said chimeric gene in said transgenic plant causes a modification of the amount of a metabolic intermediate:

(i) in the pre-existing intracellular pathway of glycolysis,

(ii) in the pre-existing intracellular pathway for the synthesis or degradation of starch, or

(iii) in the pre-existing intracellular pathway for the synthesis or degradation of sucrose or reducing sugar.

82. The transgenic plant of claim 81 wherein the chimeric gene comprises coding sequences encoding two or more of the enzymes selected.

83. The transgenic plant of claim 81, wherein the enzyme is pyruvate kinase.

84. The transgenic plant of claim 81, wherein the enzyme is starch synthase.

85. The transgenic plant of claim 81, wherein the enzyme is acid invertase.

86. The transgenic plant of claim 81, wherein the enzyme is sucrose synthase.

87. The transgenic plant of claim 81, wherein the enzyme is 6-phosphofructokinase (pyrophosphate).

88. The transgenic plant of claim 81, wherein the enzyme is sucrose phosphate synthetase.

89. The transgenic plant of claim 81, wherein the chimeric gene also comprises a coding sequence that encodes a second enzyme.

90. A transgenic plant comprising a chimeric gene which comprises:

(a) a promoter that directs gene expression in a plant operably linked to

(b) a first coding sequence which encodes phosphofructokinase and a second coding sequence which encodes an enzyme selected from the group consisting of pyruvate kinase, acid invertase, starch synthase, adenosine diphosphoglucose pyrophosphorylase, sucrose synthase, 6-phosphofructokinase (pyrophosphate) and sucrose phosphate synthetase,

wherein expression of said chimeric gene in said transgenic plant causes a modification of the amount of a metabolic intermediate:

(i) in the pre-existing intracellular pathway of glycolysis,

(ii) in the pre-existing intracellular pathway for the synthesis or degradation of starch, or

(iii) in the pre-existing intracellular pathway for the synthesis or degradation of sucrose or reducing sugar.

91. The transgenic plant of claim 90 which is a barley, wheat, maize, rice, cotton, lettuce, melon, pea, petunia, potato, rape, soyabean, sugar beet, sunflower, tobacco or tomato plant.

92. A transgenic potato plant comprising a chimeric gene, which comprises:

(a) promoter that directs gene expression in a potato plant operably linked to

(b) a first coding sequence which encodes acid invertase, and

(c) a second coding sequence which encodes an enzyme other than acid invertase,

wherein expression of said chimeric gene in said transgenic potato plant causes a modification of the amount of a metabolic intermediate:

(i) in the pre-existing intracellular pathway of glycolysis,

(ii) in the pre-existing intracellular pathway for the synthesis or degradation of starch, or

(iii) in the pre-existing intracellular pathway for the synthesis or degradation of sucrose or reducing sugar.

93. A chimeric gene comprising:

(a) a promoter that directs gene expression in a plant operably linked to

(b) a coding sequence which encodes an enzyme selected from the group consisting of phosphofructokinase, pyruvate kinase, acid invertase, starch synthase, sucrose synthase, 6-phosphofructokinase (pyrophosphate) and sucrose phosphate synthetase,

wherein expression of said chimeric gene in a plant cell modifies the amount of a metabolic intermediate:

(i) in the pre-existing intracellular pathway of glycolysis,

(ii) in the pre-existing intracellular pathway for the synthesis or degradation of starch, or

(iii) in the pre-existing intracellular pathway for the synthesis or degradation of sucrose or reducing sugar.

94. The chimeric gene of claim 93 also comprising a coding sequence that encodes a second enzyme.

95. A transgenic tuber comprising a chimeric gene which comprises:

(a) a promoter that directs gene expression in a tuber operably linked to

(b) a coding sequence which encodes an enzyme selected from the group consisting of phosphofructokinase, pyruvate kinase, acid invertase, starch synthase, sucrose synthase, 6-phosphofructokinase (pyrophosphate) and sucrose phosphate synthetase,;

wherein expression of said chimeric gene in said transgenic tuber causes a modification of the amount of a metabolic intermediate:

(i) in the pre-existing intracellular pathway of glycolysis,

(ii) in the pre-existing intracellular pathway for the synthesis or degradation of starch, or

(iii) in the pre-existing intracellular pathway for the synthesis or degradation of sucrose or reducing sugar.

96. A transgenic seed comprising a chimeric gene which comprises;

(a) a promoter that directs gene expression in a plant operably linked to

(b) a coding sequence which encodes an enzyme selected from the group consisting of phosphofructokinase, pyruvate kinase, acid invertase, starch synthase, sucrose synthase, 6-phosphofructokinase (pyrophosphate) and sucrose phosphate synthetase;

wherein expression of said chimeric gene in a transgenic plant grown from said transgenic seed causes a modification of the amount of a metabolic intermediate:

(i) in the pre-existing intracellular pathway of glycolysis,

(ii) in the pre-existing intracellular pathway for the synthesis or degradation of starch, or

(iii) in the pre-existing intracellular pathway for the synthesis or degradation of sucrose or reducing sugar.